

SABIC Innovative Plastics Lexan® EXL1414 PC Copolymer

Category : Polymer , Thermoplastic , Polycarbonate (PC)

Material Notes:

Lexan® EXL1414 polycarbonate (PC) siloxane copolymer resin is a medium flow opaque injection molding (IM) grade. This resin offers extreme low temperature (-40 °C) ductility in combination with excellent processability and release with opportunities for shorter IM cycle times compared to standard PC. Lexan EXL1414 resin is a product available in wide range of opaque colors and may be an excellent candidate for a wide variety of applications.

Order this product through the following link:

http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-Lexan-EXL1414-PC-Copolymer.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.18 g/cc	1.18 g/cc	ASTM D792
Density	1.19 g/cc	0.0430 lb/in ³	ISO 1183
Moisture Absorption	0.150 %	0.150 %	23°C / 50% RH; ISO 62
Water Absorption at Saturation	0.35 %	0.35 %	ISO 62
Linear Mold Shrinkage, Flow	0.0040 - 0.0080 cm/cm	0.0040 - 0.0080 in/in	SABIC Method
	@Thickness 3.20 mm	@Thickness 0.126 in	
Linear Mold Shrinkage, Transverse	0.0040 - 0.0080 cm/cm	0.0040 - 0.0080 in/in	SABIC Method
	@Thickness 3.20 mm	@Thickness 0.126 in	
Melt Flow	10 g/10 min	10 g/10 min	ASTM D1238
	@Load 1.20 kg, Temperature 300 °C	@Load 2.65 lb, Temperature 572 °F	
Melt Index of Compound	9.0 g/10 min	9.0 g/10 min	MVR [cm ³ /10 min]; ISO 1133
	@Load 1.20 kg, Temperature 300 °C	@Load 2.65 lb, Temperature 572 °F	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell L	89	89	ASTM D785
Hardness, Rockwell R	121	121	ASTM D785
Tensile Strength at Break	50.0 MPa	7250 psi	Type I, 50 mm/min; ASTM D638
	60.0 MPa	8700 psi	50 mm/min; ISO 527
Tensile Strength, Yield	55.0 MPa	7980 psi	Type I, 50 mm/min; ASTM D638
	57.0 MPa	8270 psi	50 mm/min; ISO 527

Elongation at Break Mechanical Properties	98 % Metric	98 % English	Type I, 50 mm/min; ASTM D638 Comments
	120 %	120 %	50 mm/min; ISO 527
Elongation at Yield	6.0 %	6.0 %	Type I, 50 mm/min; ASTM D638
	6.0 %	6.0 %	50 mm/min; ISO 527
Tensile Modulus	2.02 GPa	293 ksi	50 mm/min; ASTM D638
	2.15 GPa	312 ksi	1 mm/min; ISO 527
Flexural Yield Strength	85.0 MPa	12300 psi	2 mm/min; ISO 178
	92.0 MPa	13300 psi	1.3 mm/min, 50 mm span; ASTM D790
Flexural Modulus	2.23 GPa	323 ksi	1.3 mm/min, 50 mm span; ASTM D790
	2.25 GPa	326 ksi	2 mm/min; ISO 178
Izod Impact, Notched	8.65 J/cm	16.2 ft-lb/in	ASTM D256
	7.74 J/cm	14.5 ft-lb/in	ASTM D256
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Izod Impact, Notched (ISO)	70.0 kJ/m ²	33.3 ft-lb/in ²	80*10*3; ISO 180/1A
	60.0 kJ/m ²	28.6 ft-lb/in ²	80*10*3; ISO 180/1A
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Izod Impact, Unnotched (ISO)	NB	NB	80*10*3; ISO 180/1U
	NB	NB	80*10*3; ISO 180/1U
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Charpy Impact Unnotched	NB	NB	Edgew 80*10*3 sp=62mm; ISO 179/1eU
	NB	NB	Edgew 80*10*3 sp=62mm; ISO 179/1eU
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Charpy Impact, Notched	7.00 J/cm ²	33.3 ft-lb/in ²	Edgew 80*10*3 sp=62mm; ISO 179/1eA
	6.50 J/cm ²	30.9 ft-lb/in ²	Edgew 80*10*3 sp=62mm; ISO 179/1eA
	@Temperature -30.0 °C	@Temperature -22.0 °F	
Dart Drop, Total Energy	70.0 J	51.6 ft-lb	ASTM D3763
	@Temperature 23.0 °C	@Temperature 73.4 °F	

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	69.6 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	38.7 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	ASTM E 831
	@Temperature -40.0 - 40.0 $^{\circ}\text{C}$	@Temperature -40.0 - 104 $^{\circ}\text{F}$	
	72.0 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	40.0 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	ISO 11359-2
	@Temperature 23.0 - 80.0 $^{\circ}\text{C}$	@Temperature 73.4 - 176 $^{\circ}\text{F}$	
CTE, linear, Transverse to Flow	72.0 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	40.0 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	ISO 11359-2
	@Temperature 23.0 - 80.0 $^{\circ}\text{C}$	@Temperature 73.4 - 176 $^{\circ}\text{F}$	
	74.7 $\mu\text{m}/\text{m}\cdot^{\circ}\text{C}$	41.5 $\mu\text{in}/\text{in}\cdot^{\circ}\text{F}$	ASTM E 831
	@Temperature -40.0 - 40.0 $^{\circ}\text{C}$	@Temperature -40.0 - 104 $^{\circ}\text{F}$	
Deflection Temperature at 0.46 MPa (66 psi)	140 $^{\circ}\text{C}$	284 $^{\circ}\text{F}$	Edgew 120*10*4 sp=100mm; ISO 75/Be
	139 $^{\circ}\text{C}$	282 $^{\circ}\text{F}$	unannealed; ASTM D648
	@Thickness 3.20 mm	@Thickness 0.126 in	
Deflection Temperature at 1.8 MPa (264 psi)	128 $^{\circ}\text{C}$	262 $^{\circ}\text{F}$	Edgew 120*10*4 sp=100mm; ISO 75/Ae
	124 $^{\circ}\text{C}$	255 $^{\circ}\text{F}$	unannealed; ASTM D648
	@Thickness 3.20 mm	@Thickness 0.126 in	
Vicat Softening Point	145 $^{\circ}\text{C}$	293 $^{\circ}\text{F}$	Rate B/50; ASTM D1525
	145 $^{\circ}\text{C}$	293 $^{\circ}\text{F}$	Rate B/50; ISO 306
	146 $^{\circ}\text{C}$	295 $^{\circ}\text{F}$	Rate B/120; ISO 306
UL RTI, Electrical	130 $^{\circ}\text{C}$	266 $^{\circ}\text{F}$	UL 746B
UL RTI, Mechanical with Impact	120 $^{\circ}\text{C}$	248 $^{\circ}\text{F}$	UL 746B
UL RTI, Mechanical without Impact	125 $^{\circ}\text{C}$	257 $^{\circ}\text{F}$	UL 746B
Flammability, UL94	HB	HB	UL 94
	@Thickness 0.400 mm	@Thickness 0.0157 in	
Glow Wire Test	875 $^{\circ}\text{C}$	1610 $^{\circ}\text{F}$	IEC 60695-2-13
	875 $^{\circ}\text{C}$	1610 $^{\circ}\text{F}$	IEC 60695-2-13
	850 $^{\circ}\text{C}$	1560 $^{\circ}\text{F}$	IEC 60695-2-12
	@Thickness 0.800 mm	@Thickness 0.0315 in	

Thermal Properties	Metric	English	Comments
	@Thickness 1.00 mm	@Thickness 0.0394 in	IEC 60695-2-12

Electrical Properties	Metric	English	Comments
Volume Resistivity	$\geq 1.00 \times 10^{15}$ ohm-cm	$\geq 1.00 \times 10^{15}$ ohm-cm	ASTM D257
Surface Resistance	$\geq 1.00 \times 10^{15}$ ohm	$\geq 1.00 \times 10^{15}$ ohm	ASTM D257
Dielectric Constant	2.64	2.64	ASTM D150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
	2.68	2.68	ASTM D150
	@Frequency 100 Hz	@Frequency 100 Hz	
Dielectric Strength	16.2 kV/mm	411 kV/in	in oil; ASTM D149
	@Thickness 0.800 mm	@Thickness 0.0315 in	
Dissipation Factor	0.0012	0.0012	ASTM D150
	@Frequency 100 Hz	@Frequency 100 Hz	
	0.0093	0.0093	ASTM D150
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	

Descriptive Properties	Value	Comments
Ball Pressure Test, 125°C +/- 2°C	Passes	IEC 60695-10-2

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